UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,972	04/26/2001	Robert G. Emberty	TUC9-2001-0025-US1	9810

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EXAMINER
SHARON, AYAL I

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	09/843,972	EMBERTY ET AL.
	Examiner	**Art Unit**	
	Ayal I Sharon	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *26 April 2001*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-19* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *26 April 2001* is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *4/26/2001*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-19 of U.S. Application 09/843,972 filed on 04/26/2001 are presented for examination.

Drawings

2. Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

3. Independent claims 14 and 17 contain subject matter that is novel in view of the cited prior art. These claims contain the following limitation:

> forming a first association of a plurality of commands for instructing a
> plurality of different types of memory elements which the host
> computer expects the library to be according to a fibre channel

protocol;

Neither Sun nor Dimitri teach "a plurality of different types of memory elements".

In fact, Dimitri teaches away from this limitation (see col.4, lines 38-41) by

teaching that:

> As described above, RAID is a "redundant array of inexpensive disk
> drives" and stores data and parity amongst the data storage drives in such
> a manner that, should one data storage drive fail, the remainder may
> continue to operate without loss of any data."

Dimitri does not expressly teach "a plurality of different types of memory

elements". The Sun reference also does not expressly teach "a plurality of

different types of memory elements".

Also, unlike the present application, neither of these references teach the

following limitation:

identifying the type of memory element which the host computer expects
the library to be;

However, Claims 14 and 17, and their dependent claims, have been

rejected due to Double Patenting (See the "Double Patenting" section of this

Office Action).

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to
prevent the unjustified or improper timewise extension of the "right to exclude"
granted by a patent and to prevent possible harassment by multiple assignees.
See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re
Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686
F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164
USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644
(CCPA 1969).
    A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may
be used to overcome an actual or provisional rejection based on a nonstatutory

double patenting ground provided the conflicting application or patent is shown to
be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may
sign a terminal disclaimer. A terminal disclaimer signed by the assignee must
fully comply with 37 CFR 3.73(b).

5. Claim 1 is rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over claim 1 of U.S. Patent No.

6,754,768. Although the conflicting claims are not identical, they are not

patentably distinct from each other because:

a. "providing an output port" in the present application corresponds to "(a)

representing to a host computer that the library is a predetermined

selected form of a mass storage" in the issued patent.

b. "addressing one or more hard disk drives in the library using a fibre

channel communications protocol" in the present application corresponds

to "receiving a command from the host computer and a logical address for

a hard disk drive to which said disk pertains" and "(g) carrying out said

command ... according to said handshaking protocol" in the issued patent.

c. "fetching the one or more hard disk drives" in the present application

corresponds to "(f) ... retrieving said hard disk drive from said storage bin

..." in the issued patent.

d. "electrically coupling the one or more hard disk drives to the output port" in

the present application corresponds to "(f) ... electrically interconnecting

said hard disk drive and said destination receptacle ..." in the issued

patent.

e. It would have been obvious to one of ordinary skill in the art at the time the invention that Claim 1 in the application is an obvious variation of Claim 1 in the issued patent, because the limitations in Claim 1 in the application have corresponding limitations in Claim 1 in the issued patent.

All claims dependent on Claim 1 inherit this defect.

6. Claim 7 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,754,768. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the same reasoning provided in the rejection of Claim 1 (above). Claim 7 is an article of manufacture claim reciting the equivalent limitations as are recited in method claim 1. All claims dependent on Claim 7 inherit this defect.

7. Claim 14 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 9 of U.S. Patent No. 6,754,768. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

a. The first limitation in the claim in the application is as follows:

forming a first association of a plurality of commands for instructing a **plurality of different types of memory elements** which the host computer expects the library to be according to **a fibre channel protocol**;

The corresponding limitation in the claim in the patent is as follows:

forming a first association of a plurality of commands for instructing a **predetermined type of memory element** and a **plurality of protocols**;

b. The second limitation in the claim in the application:

forming a second association of said plurality of commands and a plurality
of codes particularly adapted for controlling respective memory
elements in the library;

The corresponding limitation in the claim in the patent is as follows:

forming a second association of said plurality of commands and a plurality
of codes particularly adapted for controlling respective memory
elements in the library;

The limitations are identical.

c. The third limitation in the claim in the application:

receiving a command from a host computer **according to the fibre channel
protocol**;

The corresponding limitation in the claim in the patent is as follows:

receiving a command from a host computer **according to one of said
protocols** for instructing said device;

d. The fourth limitation in the claim in the application:

identifying **the type of memory element which the host computer expects
the library to be**;

The corresponding limitation in the claim in the patent is as follows:

identifying **said protocol**;

e. The fifth limitation in the claim in the application:

identifying said command by consulting said first association;

The corresponding limitation in the claim in the patent is as follows:

identifying said command by consulting said first association;

The limitations are identical.

f. The sixth limitation in the claim in the application:

selecting, by the controller, one or more of the memory elements in the
library for carrying out the command;

The corresponding limitation in the claim in the patent is as follows:

selecting, by the controller, one or more of the memory elements in the
library for carrying out the command;

The limitations are identical.

g. The seventh limitation in the claim in the application:

identifying the associated said code by consulting said second association
for said selected memory elements; and

The corresponding limitation in the claim in the patent is as follows:

identifying the associated said code by consulting said second association
for said selected memory elements; and

The limitations are identical.

h. The eighth limitation in the claim in the application:

executing the identified code for carrying out the command in the library
with said selected memory elements.

The corresponding limitation in the claim in the patent is as follows:

executing the identified code for carrying out the command in the library
with said selected memory elements.

The limitations are identical.

i. The difference between the two claims is that Claim 1 in the application

claims multiple memory types and one protocol, while Claim 1 in the

issued patent claims one memory type and multiple protocols.

j. It would have been obvious to one of ordinary skill in the art at the time the

invention that Claim 1 in the application is an obvious variation of Claim 1

in the issued patent, because the differences consist of duplication of

parts.

All claims dependent on Claim 14 inherit this defect.

8. Claim 17 is rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over claim 12 of U.S. Patent No.

6,754,768. Although the conflicting claims are not identical, they are not

patentably distinct from each other because of the same reasoning provided in

the rejection of Claim 14 (above). Claim 17 is an article of manufacture claim

reciting the equivalent limitations as are recited in method claim 14. All claims

dependent on Claim 17 inherit this defect.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The prior art used for these rejections is as follows:

11. Sun Microsystems Inc. Sun StorEdge(tm) SCSI Target Emulation (STE) 1.1

Release Notes. Revision A. Part No. 806-1948-10. August 1999. (Henceforth

referred to as "**Sun**")

12. Dimitri et al., U.S. Patent 5,970,030. (Henceforth referred to as "**Dimitri**").

13. The claim rejections are hereby summarized for Applicant's convenience. The

detailed rejections follow.

14. **Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Sun in view of Dimitri.

15. In regards to Claim 1, Sun teaches the following limitations:

1. A method for emulating a fibre channel port by a library of hard disk drives, comprising:

providing an output port;
(Sun, especially: p.3)

addressing one or more hard disk drives in the library using a fibre channel
communications protocol;
(Sun, especially: p.3)

More specifically, Sun teaches on p.3 that "STE enables open systems hosts (currently Solaris or NT systems) to connect to a Solaris server or storage controller via Fibre Channel cables and access the attached storage as if it were one or more SCSI target devices."

However, while Sun teaches "... accessing the attached storage as if it were one or more SCSI target devices", Sun does not expressly teach the following limitations:

fetching the one or more hard disk drives; and

electrically coupling the one or more hard disk drives to the output port.

Dimitri, on the other hand, does teach these limitations (Dimitri, especially: col.2, lines 57-63; col.3, line 55 to col.4, line 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Sun with those of Dimitri, because doing so would "... provide a low cost means for switching library controllers between accessors", and would also "... provide a low cost automation of the failed recording device or failed drive replacement process." (Dimitri, especially: col.2, lines 24-30).

16. In regards to Claim 2, Sun does not expressly teach the following limitations:

2. The method of claim 1, further comprising coupling the one or more hard disk drives to a destination cell which is electrically connected to the output port.

Dimitri, on the other hand, does teach these limitations (Dimitri, especially:

col.2, lines 57-63; col.3, line 55 to col.4, line 7).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the teachings of Sun with those of Dimitri, because

doing so would "... provide a low cost means for switching library controllers

between accessors", and would also "... provide a low cost automation of the

failed recording device or failed drive replacement process." (Dimitri, especially:

col.2, lines 24-30).

17. In regards to Claim 3,

> 3. The method of claim 1, further comprising issuing an instruction in response to
> said step of addressing for waiting before initiating data communications with the one or more
> hard disk drives.

Examiner has interpreted this claim as if it were written as follows:

> 3. The method of claim 1, further comprising the following: in response to said step of addressing,
> issuing an instruction for waiting before initiating data communications with the one or more hard
> disk drives.

Examiner finds this to be inherent, because if the system begins data

communications (read / write commands) before the hard disk drive(s) have

acknowledged the initial step of addressing, then the hard disk drive will not be

ready, and any communications with an unready hard drive will not work.

18. In regards to Claim 4, Sun teaches the following limitations:

> 4. The method of claim 1, further comprising receiving incoming data before said
> step of electrically coupling the one or more hard disk drives to the output port, temporarily storing
> said data, and writing said data to the one or more hard disk drives after said step of electrically
> coupling the one or more hard disk drives to the output port.

Examiner finds this to be inherent, because if the incoming data is not

temporarily stored somewhere while the destination hard drive is not ready, then

that incoming data will be lost, and the system will not work properly.

19. In regards to Claim 5, Sun teaches the following limitations:

5. The method of claim 1, further comprising temporarily storing data associated with
the address provided by said step of addressing prior to said step of fetching the one or more
hard disk drives, and outputting said data prior to said step of fetching the one or more hard disk
drives but subsequent to said step of addressing.

Examiner finds this to be inherent, because if the incoming data is not

temporarily stored somewhere while the destination hard drive is not ready, then

that incoming data will be lost, and the system will not work properly.

20. In regards to Claim 6, Sun teaches the following limitations:

6. The method of claim 1, further comprising providing data associated with the
address provided by said step of addressing, recognizing said data with said fibre channel
protocol, and interpreting said data with an upper layer protocol.

Examiner finds this to be inherent to how networking layers function. (See MCSE

Networking Essentials, pp.53 "How Peer OSI Layers Communicate", and pp.54-

55 "Protocol Stacks").

21. In regards to Claim 13, Sun teaches the following limitations:

13. An apparatus for emulating a fibre channel port for use in a library of hard disk
drives, comprising a library having a fabric port connected to a host computer and an output port
(Sun, especially: p.3)

More specifically, Sun teaches on p.3 that "STE enables open systems

hosts (currently Solaris or NT systems) to connect to a Solaris server or storage

controller via Fibre Channel cables and access the attached storage as if it were

one or more SCSI target devices."

However, while Sun teaches "... accessing the attached storage as if it were one or more SCSI target devices", Sun does not expressly teach the following limitations:

connected to a destination cell adapted for removable coupling to a selected one of the hard disk drives.

Dimitri, on the other hand, does teach these limitations (Dimitri, especially: col.2, lines 57-63; col.3, line 55 to col.4, line 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Sun with those of Dimitri, because doing so would "... provide a low cost means for switching library controllers between accessors", and would also "... provide a low cost automation of the failed recording device or failed drive replacement process." (Dimitri, especially: col.2, lines 24-30).

22. **Claims 7-12 are rejected based on the same reasoning as claims 1-6, _supra_. Claims 7-12 are article of manufacture claims reciting the equivalent limitations as are recited in method claims 1-6 and taught throughout Sun and Dimitri.**

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone numbers are (703) 306-0297 *[Before Oct. 25, 2004]* and (571) 272-3714 *[After Oct. 25, 2004]*.

The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached at (703) 305-9704 *[Before Oct. 25, 2004]* and (571) 272-3716 *[After Oct. 25, 2004]*.

Any response to this office action should be faxed to (703) 872-9306 or mailed to:
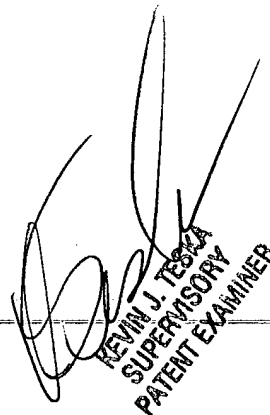
Director of Patents and Trademarks
Washington, DC 20231

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (703) 305-3900 *[Before Oct. 25, 2004]* or (571) 272-2100 *[After Oct. 25, 2004]*.

Ayal I. Sharon

Art Unit 2123

September 29, 2004